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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,927	02/27/2002	Swam S. Kalsi	05770-170001 / AMSC-546	5818
26161	7590	07/20/2005	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			TAMAI, KARL I	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 07/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/083,927

Applicant(s)

KALSI ET AL

Examiner

Tamai IE Karl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The rejection of Claims 1, 5, 30 and 33 under 35 U.S.C. 102(b) over Boer et al. (Boer)(US 4356419) is withdrawn.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1, 2, 5, 30, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Albright et al. (Albright)(US 4,330,726). Boer teaches a stator assembly 1,2 forming an axial passage with thermally conductive, non-magnetic teeth forming channels for coils 3,4,5 and forming a passage for the rotor. Boer teaches the coil support (teeth) being non-magnetic and thermally conductive but not then entire coil support being non-magnetic and thermally conductive material, or a ground plane assembly. Albright teaches the entire coils support being non-magnetic. Albright teaches a fiberglass tie to provide grounding protection (col. 6, lines 14-20). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of Boer with the non-magnetic coil support section 2 entirely supporting the coil as in Albright to properly support and coil the motor, and with the coils having ground armor to short the coil armor to ground.

4. Claims 3, 4, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Albright et al. (Albright)(US 4,330,726), in further view of Denk (US 4,709,180). Boer and Albright teach every aspect of the invention except axial cooling passages for the circulation of a cooling liquid. Denk a cooling liquid circulated through the axial cooling passages of the magnetic core 90. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Albright with the fluid cooling of Denk to remove heat from the stator.

5. Claims 7, 8, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Albright et al. (Albright)(US 4,330,726), in further view of Laskaris (US 4,385,248). Boer and Albright teach every aspect of the invention except, the wedge material 2 being graphite based and the epoxy filler between the coil assembly and the coil support. Boer teaches the wedges are epoxy-graphite. Boer teaches the coils are epoxy impregnated, which would inherently include epoxy between the coils and the support. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Albright with the wedges being epoxy graphite because Boer teaches the composite material is a good choice for the wedge, and with the epoxy filler between the coils and the support to reduce losses between the winding and the support.

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6. Claims 6 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419), Albright et al. (Albright)(US 4,330,726), and Laskaris (US 4,385,248), in further view of Mariner et al. (Mariner)(US 5,863,467). Boer, Albright, and Laskaris teach every aspect of the invention except, the epoxy being a polymer. Mariner teaches a polymer graphite material which has good thermal conductivity. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer, Albright, and Laskaris with the epoxy being a polymer because Mariner teaches the polymer graphite material has good thermal conductivity.

7. Claims 9, 10, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Albright et al. (Albright)(US 4,330,726), in further view of Cooper et al. (Cooper)(US 4,123,676). Boer and Albright teach every aspect of the invention except a superconducting rotor. Cooper teaches a refrigerated, superconducting rotor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Albright with the rotor of Cooper to provide a low loss field rotor.

8. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419), Albright et al. (Albright)(US 4,330,726), and Cooper et al. (Cooper)(US 4,123,676), in further view of Denk (US 4,709,180). Boer, Albright, and Cooper teach every aspect of the invention except axial cooling passages

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for the circulation of a cooling liquid. Denk a cooling liquid circulated through the axial cooling passages of the magnetic core 90. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer, Albright, and Cooper with the fluid cooling of Denk to remove heat from the stator.

9. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4,356,419), Albright et al. (Albright)(US 4,330,726), and Cooper et al. (Cooper)(US 4,123,676), in further view of Laskaris (US 4,385,248). Boer, Albright, and Cooper teach every aspect of the invention except, the wedge material 2 being graphite based and the epoxy filler between the coil assembly and the coil support. Boer teaches the wedges are epoxy-graphite. Boer teaches the coils are epoxy impregnated, which would inherently include epoxy between the coils and the support. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer, Albright, and Cooper with the wedges being epoxy graphite because Boer teaches the composite material is a good choice for the wedge, and with the epoxy filler between the coils and the support to reduce losses between the winding and the support.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4,356,419), Albright et al. (Albright)(US 4,330,726), Cooper et al. (Cooper)(US 4,123,676), and Laskaris (US 4,385,248), in further view of Mariner et al. (Mariner)(US 5,863,467). Boer, Albright, Cooper, and Laskaris teach every aspect of

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the invention except, the epoxy being a polymer. Mariner teaches a polymer graphite material which has good thermal conductivity. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer, Albright, Cooper, and Laskaris with the epoxy being a polymer because Mariner teaches the polymer graphite material has good thermal conductivity.

11. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer), Albright et al. (Albright), and Cooper et al. (Cooper), in further view of Gamble et al. (Gamble) (US 5,777,420). Boer, Albright, and Cooper teach every aspect of the invention except, the superconductive material being HTS material. Gamble teaches a HTS material for the rotor windings. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer, Albright, and Cooper with the HTS rotor windings because Gamble teaches that the material is preferred in superconductive rotors.

### ***Response to Arguments***

12. Applicant's arguments filed 9/9/2004 have been fully considered but they are moot in view of the new ground of rejection.

### ***Conclusion***

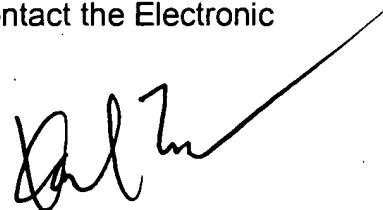
13. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai at (571) 272 - 2036. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (703) 872 - 9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai  
PRIMARY PATENT EXAMINER  
June 29, 2005



**KARL TAMAI**  
**PRIMARY EXAMINER**